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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,381	03/06/2002	Minoru Usui	Q68776	2803

7590 02/24/2003

Sughrue Mion
2100 Pennsylvania Avenue NW
Washington, DC 20037-3213

EXAMINER

VO, ANH T N

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 02/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
10/070,381

Applicant(s)

USUI

Examiner

Anh T. N. Vo

Art Unit

2861



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2 6) ☐ Other:

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DETAILED ACTION

Oath/Declaration

The declaration filed 03 June 2002 is acceptable.

Information Disclosure Statement

The references cited on PTO 1449 have been considered.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Abstract

The abstract is objected to in that all of the reference numbers, i.e., "4" on line 2 should be placed within a bracket. Correction is required.

Specification

The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

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Claims Objection

Claims 1-2 and 6-7 are objected to because they do not clearly recite the preamble and the body. Correction is required.

CLAIM REJECTIONS

Claim Rejections - 35 U.S.C. § 112

Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Appropriate correction or clarification is required.

In claim 1, the recitation "the central region" on line 10 lacks antecedent basis. It is unclear how the membrane valve can be "pressed" on line 5 since no means for performing the pressing function is recited and where the "pressure ink" on line 8 comes from. The same is true for claims 6 and 7.

In claim 3, the recitation "wherein the membrane valve is arranged in a flowing passage connecting an ink cartridge and an ink jet recording head" is misdescriptive because the valve and the head are the elements of the cartridge so that how the valve can connect the cartridge to the head.

In claim 5, the recitation "the elasticity applying means" lacks antecedent basis and it is unclear where it comes from. The same is true for claim 8.

The remaining claims are dependent from the above claims and therefore also considered indefinite.

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Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3/1, 4/1, 5/1, 6 and 8/6 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kikuchi et al (US 6,394,137) in view of Wachi (US 6,220,690).

Kikuchi discloses in Figures 1-12 a valve device comprising:

- a membrane (1) having its periphery thick portion supported by a valve seat (4) and a thin portion having an ink passing port (3) in a center; and
- an elastic member (6).

However, Kikuchi et al do not disclose the angled portion that is concentric with respect to the ink passage port formed in the central region of the thin portion.

Nevertheless, Wachi teaches in Figures 4A-4B and 5A-5B a printing device comprising a diaphragm member (4312) having an angled portion formed at a central region of the thin portion for allowing the diaphragm (4312) to stretch out without breaking.

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It would have been obvious to a person having skill in the art at the time the invention was made to incorporate the teaching of the angled portion taught by Wachi into the valve device of Kikuchi et al for the purpose of allowing the membrane to stretch out without breaking.

Claims 2, 3/2, 4/2, 5/2, 7/2 and 8/7 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kikuchi et al (US 6,394,137) in view of Tsuzuki et al (4,882,596).

Kikuchi et al discloses in Figures 1-12 a valve device comprising:

- a membrane (1) having its periphery thick portion supported by a valve seat (4) and a thin portion having an ink passing port (3) in a center; and
- an elastic portion (6).

However, Kikuchi et al do not disclose the plural protruding rib portion radially extending from ink passing port.

Tsuzuki et al teaches in Figure 3A a valve device comprising plural arms (12) or ribs radially extending from the ink passing port for supporting the valve device.

It would have been obvious to a person having skill in the art at the time the invention was made to incorporate the teaching of the ribs taught by Tsuzuki et al into the valve device of Kikuchi et al for the purpose of supporting the membrane.

CONCLUSION

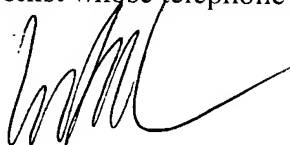
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Anh Vo, whose telephone number is (703) 305-8194. The examiner can normally be reached on Monday to Friday from 8:00 A.M. to 4:00 P.M. The fax number of this Group 2861 is (703) 305-3431 or 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



ANH T.N. VO
PRIMARY EXAMINER

February 18, 2003